

Hypertension Guideline 2004: A Brief Overview

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Key Elements

"Speed to Target"

- ◆ Screen
- ◆ Prevent
- ◆ Encourage
- ◆ Evaluate
- ◆ Drug(s) Therapy
- ◆ Titrate
- ◆ Organize
- ◆ TARGET

SPEED

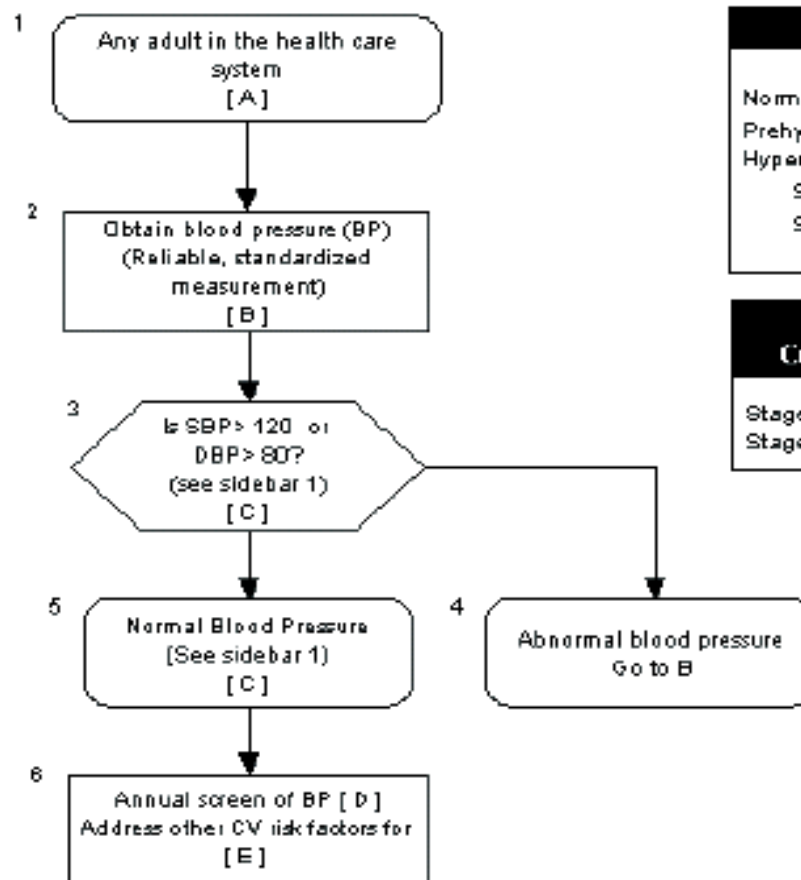


MANAGEMENT OF HYPERTENSION

Module A: Screening for Abnormal Blood pressure

A

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Sidebar 1: Classification

	SBP	and	DBP
Normal:	< 120		< 80
Prehypertension:	120-139		80-89
Hypertension			
Stage 1 :	140-159	or	90-99
Stage 2 :	≥160	or	≥ 100

Sidebar B: Confirmation of initial elevated

Stage 1: Confirm within 2 months
Stage 2: Evaluate or refer within 1 month

Screen Now

◆ Assess blood pressure in adults

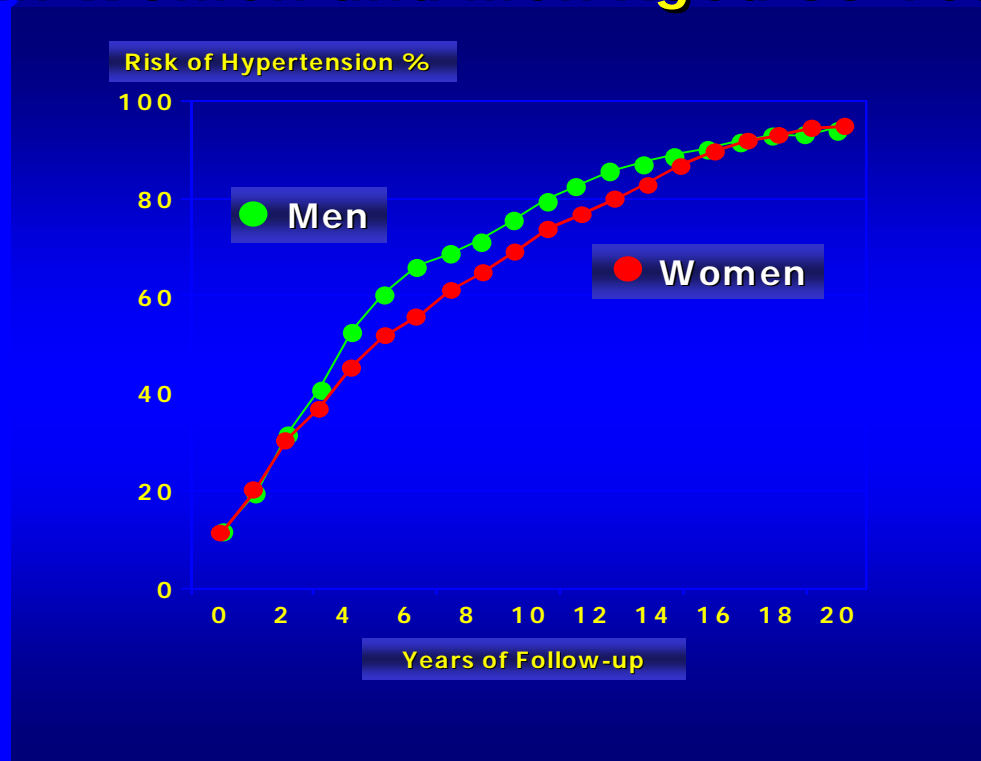
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Screen Annually

Incidence Rises Over Time

1976-98 Cumulative Incidence of HTN in Women and Men Aged 65 Years



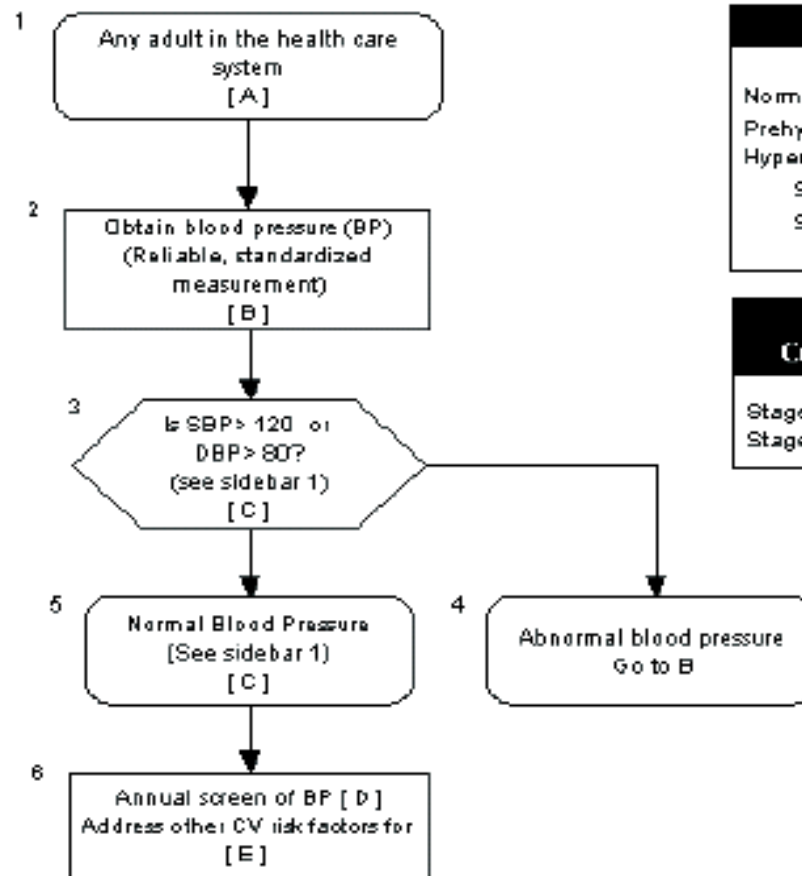
JAMA.2002;287:1003-1010

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Prevent

- ◆ Prevent blood pressure from rising further over time
- ◆ Lower cardiac and other vascular risks

Encourage

◆ Lifestyle modifications

Table 3. Impact of Lifestyle Therapies on BP in Hypertensive Adults*

Intervention	Lifestyle Modification or Change	Systolic BP Reduction (range)
Daily sodium intake	Maximum of 100 meq/L day (2.4 g sodium or 6 gms sodium chloride)	2-8 mm Hg
Weight loss	Reduce to and/or maintain normal body weight (e.g., Body Mass Index, 18.5-24.9)	5-20 mm Hg/10-kg wt loss
Alcohol consumption	Limit to no more than 2 drinks per day for men, and no more than 1 drink per day in women and light weight persons	2-4 mm Hg
Exercise	Aerobic exercise for at least 30 minutes, most days of week	4-9 mm Hg
DASH Diet	Dietary Approaches to Stop Hypertension (DASH) diet rich in fruits, vegetables, and low-fat dairy products, with overall reduced saturated and total fat content	8-14 mm Hg

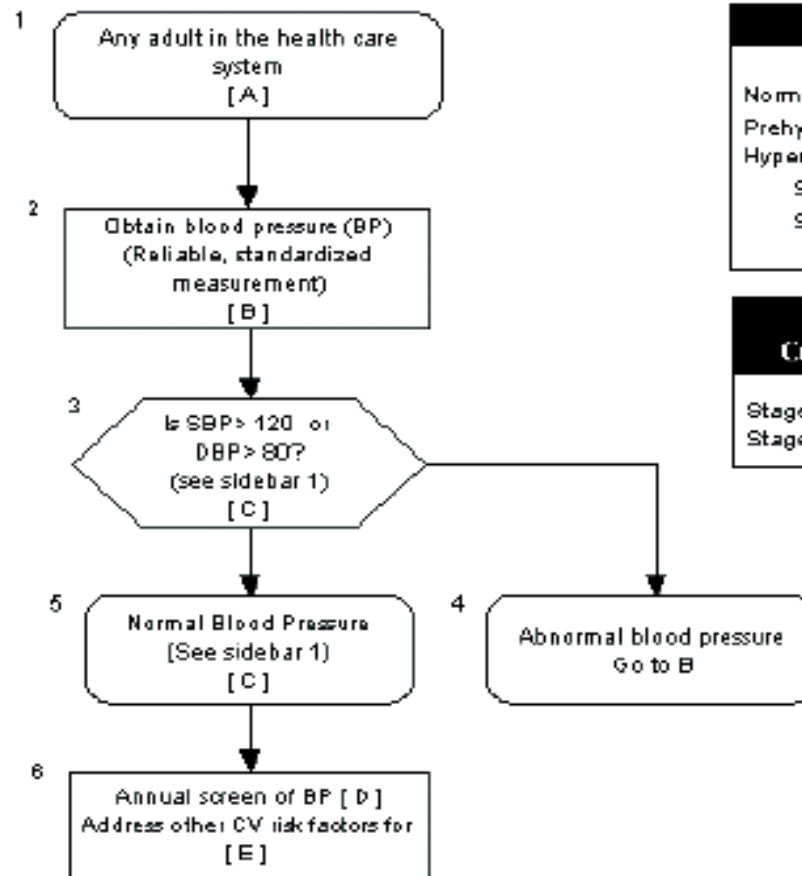
*Modified from JNC 7

MANAGEMENT OF HYPERTENSION

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Evaluate and Confirm

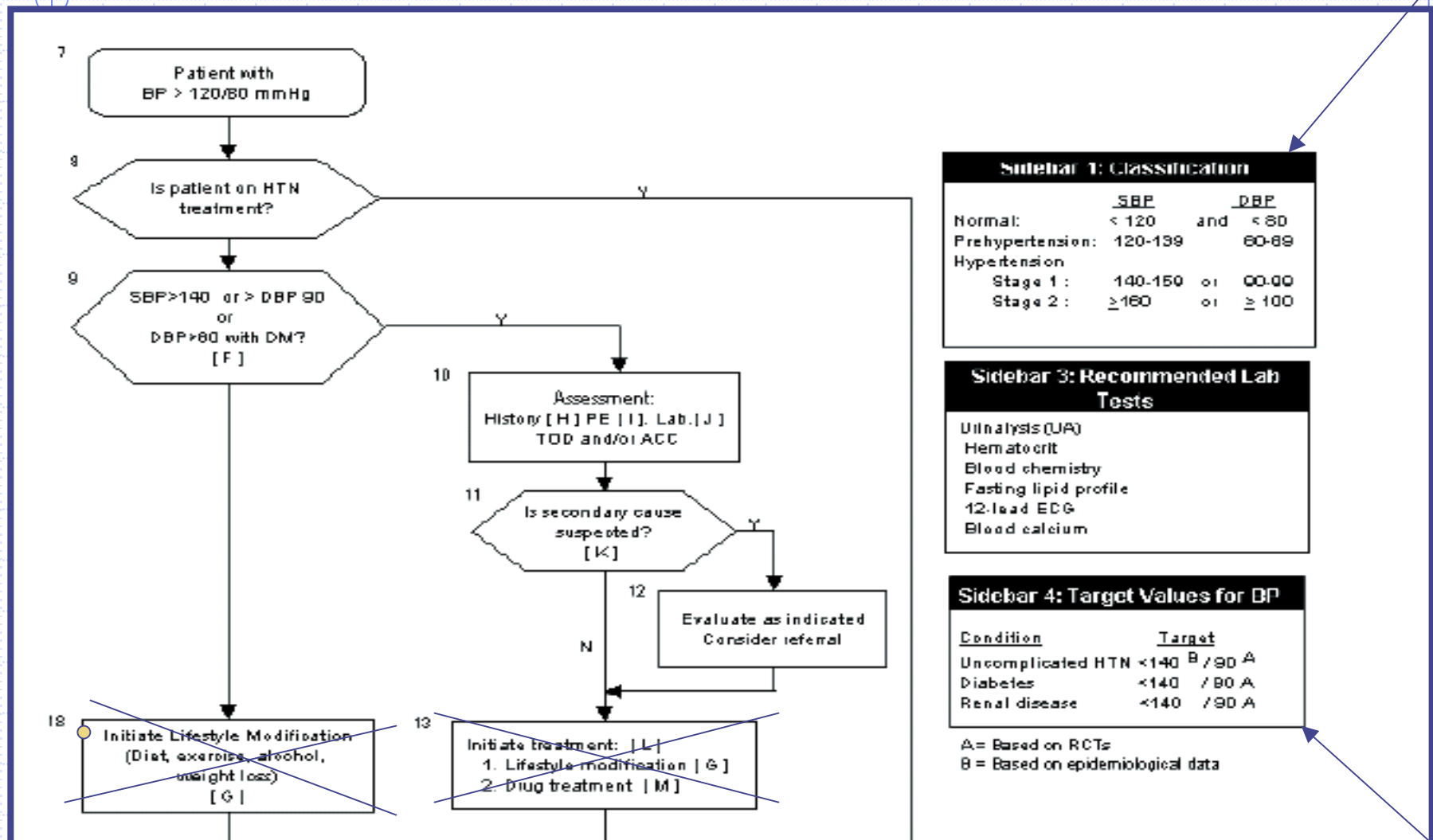
Table 2. Follow-Up Based on Initial Classification of Blood Pressure for Adults

	SBP * Mm Hg	DBP * Mm Hg	Follow-up
Normal	< 120	< 80	Recheck in 1 year
Prehypertension	120-139	80-89	Recheck in 1 year **
Stage 1 Hypertension	140-159	90-99	Confirm within 1-2 months
Stage 2 Hypertension	≥160	≥100	Evaluate or refer to source of care immediately or within 1 month, or sooner, depending on clinical situation

* If systolic and diastolic categories are different, follow recommendations for the higher measurement. (e.g. 160/86 mm Hg is considered Stage 2 hypertension and thus should be evaluated or referred to source of care within 1 month).

** Modify the scheduling of follow-up according to reliable information about past blood pressure measurements, other comorbidities, or target organ disease.

Evaluate Thresholds



Evaluate Relevant Tests

RECOMMENDATION

Routine laboratory tests for the investigation of all patients with hypertension

1. Urinalysis (UA)
2. Blood chemistry (potassium, sodium, blood urea nitrogen [BUN], creatinine, fasting glucose)
3. Fasting lipid profile (total cholesterol, HDL-C, LDL-C, TG)
4. 12-lead electrocardiography

Optional laboratory tests*

1. Hematocrit, Complete Blood cell Count
2. GFR estimated by MDRD (Modification of Diet in Renal Disease Study Group) equation)**
3. Blood calcium
4. Urinary protein excretion (24-hour urine collection or spot urine for protein/creatinine ratio)
5. Uric acid
6. Glycosylated hemoglobin (HbA1c)
7. Thyroid-stimulating hormone (thyrotropin) (TSH)
8. Transthoracic echocardiography to determine the presence of left ventricular hypertrophy

Evaluate Impact

- ◆ For patients (Stage I) who engage in Lifestyle management as initial therapy for 3 to 6 months:
 - If not to target, start medications



Drug Therapy

- ◆ Choose an agent that has been shown to decrease mortality and morbidity
 - Thiazide, thiazide, thiazide
 - ◆ Especially multi-drug therapy
 - And then (in alphabetical order)
 - ◆ ACE
 - ◆ ARB
 - ◆ Beta-blocker
 - ◆ Calcium-channel blockers (long-acting)
- ◆ Initiate in conjunction with LSM
- ◆ For stage II HTN, two drug therapy - particularly low-dose combinations are more effective in achieving target level BP



Drug Therapy: Other Agents

- ◆ Other supplemental agents to use when primary drugs not sufficient:
 - Reserpine (has mortality/morbidity benefit)
 - Clonidine, central agents
 - Aldosterone antagonists
 - Alpha-blockers (but not as monotherapy)
 - Vasodilators (e.g., hydralazine)

Drug Therapy: Compelling Indications

- ◆ Some conditions require treatment with hypotensive drugs, regardless of BP

Table 8. Preferred Agents in Patients with Comorbidities

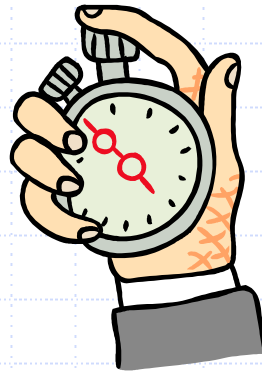
	Preferred agents	Additional/Alternative	Other agents
DM	Thiazide-type diuretic and/or ACEI	ARB CCB Beta-blocker	
Systolic HF	ACEI Beta-blocker	ARB Hydralazine-Nitrate Aldosterone antagonist	Diuretic (for treatment of volume overload) LADHP
CKD	ACEI ARB Diuretic (thiazide or loop, based on kidney function)	Beta-blocker NCCB LADHP	
Post Stroke	Thiazide-type diuretic and ACEI		
Post – MI	Beta-blocker ACEI	NCCB Thiazide-type diuretic	LADHP

ACEI = angiotensin- converting enzyme inhibitor; ARB = angiotensin receptor blocker; NCCB = nondihydropyridine calcium channel blocker; CVD = cardiovascular disease; LADHP = long-acting dihydropyridine calcium channel blocker

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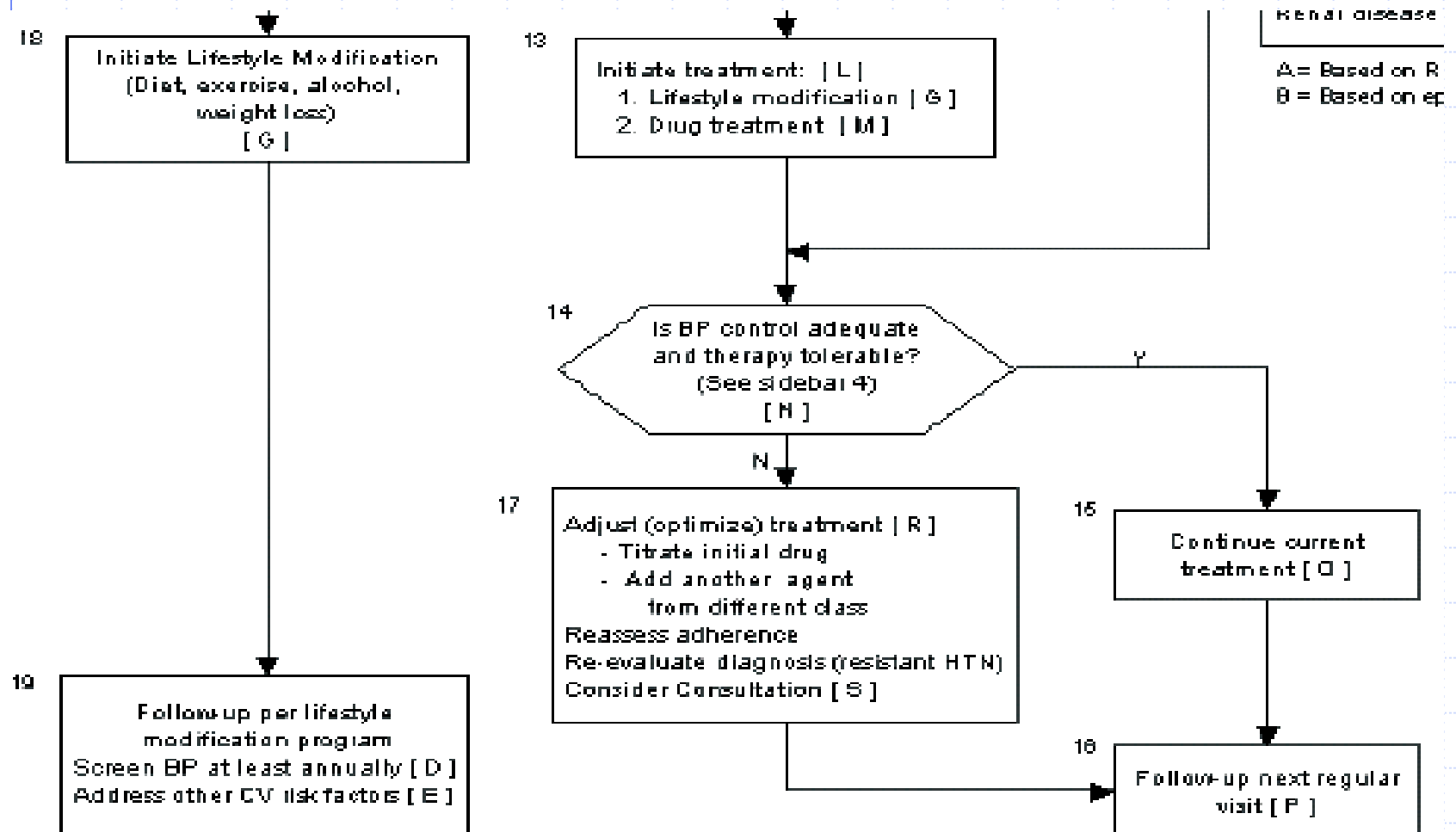
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Speed **To** Target



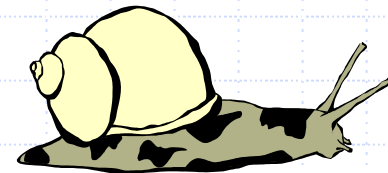
TARGET:

Titrate and Organize



Titrate to Goal

- ◆ See frequently, and be aggressive
 - Every 2-4 weeks, as needed
- ◆ Reinforce lifestyle modification
- ◆ Ask about adverse effects of drugs
- ◆ Add agents if necessary
- ◆ Don't allow "clinical inertia" to set in



Organize Resources

◆ use available resources

- Dietitians
- Nurses, pharmacists, case managers for BP monitoring
- Home blood pressure monitoring to reinforce importance of control
- Telephone calls



Speed to TARGET

<i>Condition</i>	<i>Target (SBP/DBP)</i>	Level of Evidence	Resource
Hypertension	<140/90	<150/90 (I,A) <140/90 (II,B)	SBP: SHEP, Syst-Eur DPB: HDFP, HOT
Diabetes	<140/80	(I,A)	UKPDS, HOT
DM + Nephropathy	<140/80	(I,A)	IDNT RENAAL MDRD
Chronic Kidney Disease	<140/90	<140/90 (I,A) <130/80 (III,C)	AASK
Proteinuria >1g/day	<125/75	(III,C)	Post analyses MDRD

QE = Quality of Evidence; R = Recommendation

Target goal is based on clinic and not home monitoring!

Summary

- ◆ **Screen Adults Annually**
- ◆ **Prevent Progression of HTN/vascular disease**
- ◆ **Encourage Lifestyle Changes**
- ◆ **Evaluate Diagnosis, Thresholds and Tests**
- ◆ **Drug(s) Choice**
- ◆ **Titrate aggressively**
- ◆ **Organize available resources**
- ◆ **TARGET**

